

ITE Teaching and Learning CONFERENCE
**Enhancing authentic
learning capabilities**

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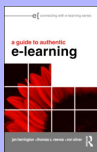


Authentic learning

What is it?
What is it not?



9 elements of authentic learning



(Herrington,
Reeves &
Oliver, 2010)

- Authentic context
- Authentic activity
- Expert performances
- Multiple perspectives
- Collaboration
- Reflection
- Articulation
- Coaching and scaffolding
- Authentic assessment

Authentic context

Authentic context
Authentic task
Expert performance
Multiple views
Collaboration
Articulation
Reflection
Scaffolding
Authentic assessment

A physical or virtual environment that reflects the way the knowledge will be used in real-life

Authentic context

- The context needs to provide the purpose and motivation for learning
- Ideas can be explored at length
- A design to preserve the complexity of the real-life setting
- Not sufficient to simply provide suitable examples from real-world situations to illustrate the concept or issue being taught



Authentic tasks

Authentic context
Authentic tasks
Expert performance
Multiple views
Collaboration
Articulation
Reflection
Scaffolding
Authentic assessment

Tasks and activities that have real-world relevance

Authentic tasks

- Design activities that have clear goals and real-world relevance
- Tasks that require production of knowledge rather than reproduction
- Tasks that are complex and ill-defined
- Completed over a longer period



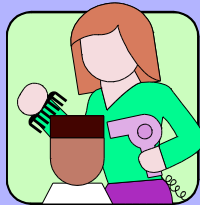
Expert performance

Authentic context
Authentic task
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Authentic assessment

Access to expert thinking and the modelling of processes

Expert performances

- Access to the way an expert would think and act
- Access to learners in various levels of expertise
- Opportunities for the sharing of narratives and stories



Multiple perspectives

Authentic context
Authentic task
Expert performance
Multiple perspectives
Collaboration
Articulation
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Scaffolding
Authentic assessment

Different perspectives from different points of view

Multiple perspectives

- Not just a single perspective - such as a textbook
- Sufficiently rich learning environment to sustain repeated examination
- Different points of view



Collaboration

Authentic context
Authentic task
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Joint problem solving and social support

Collaboration

- Teams or pairs rather than individuals
- Collaboration encouraged through technology (discussion, chats, debates, wikis)
- Tasks addressed to groups, not individuals



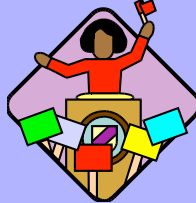
Articulation

Authentic context
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Authentic assessment

Opportunities for students to speak about their growing understanding

Articulation

- Problems that need to be discussed
- Presentations to class
- Public presentation of argument to enable defence of position and ideas



Reflection

Authentic context
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Opportunity to think about, reflect and make choices

Reflection *in* action

- The facility for students to move around their learning environment and to act upon reflection
- Not quiet and solitary - can be a two-way process
- Non-linear organisation of learning environment
- Opportunities to make choices



Reflection *on* action

Journals

Diaries

Blog site or word processing



Scaffolding and coaching

Authentic context
Authentic task
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Authentic assessment

Support provided to the learner by the teacher and others in the learning environment

Coaching and scaffolding

- No attempt to 'transmit' knowledge
- Teacher's role is supporting rather than didactic
- Collaboration where more able partners can assist



Authentic assessment

Authentic context
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Assessment is integrated with the task rather than separate testing

Authentic assessment

- Seamless integration of assessment and task
- Opportunities to enable students to craft polished performances
- Significant student time and effort in collaboration with others



Example: Research methods

- Course: [Research preparation: Research methods](#)
- Max Angus & Jan Gray, School of Education, Edith Cowan University



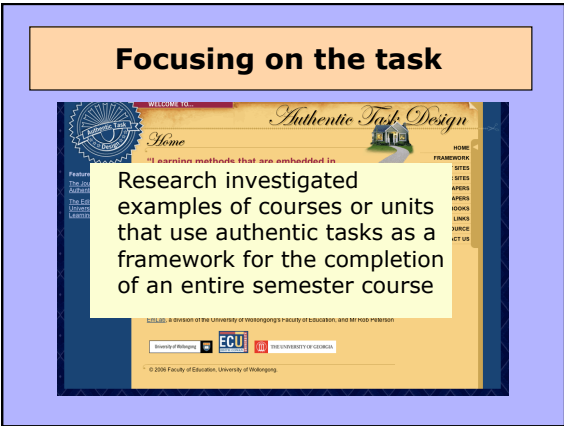
Focusing on the task

It's the task that matters most!

Tom Reeves

Authentic context
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Focusing on the task



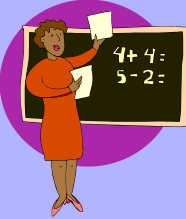
What are **not** authentic tasks?

Authentic tasks are more than stories and examples



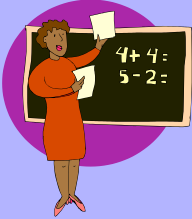
What is an authentic task?

- $2x + 1 = 7$
Solve for x
- $\frac{1}{2} + \frac{3}{4} =$
- Graph
 $y = \sin 2x$



Word problems

There are 25 people in a room. How many handshakes would there be, if everyone shook hands with every other person?



Decontextualized problems

Let F be the vector field on \mathbb{R}^3 given by $F(x,y,z) = (2xz, -x, y^2)$. Evaluate $\iiint_V F \cdot dV = (\iiint_V 2xz \, dV - \iiint_V x \, dV + \iiint_V y^2 \, dV)$ where V is the region bounded by the surfaces $x = 0$, $y = 0$, $y = 6$, $z = x^2$ and $z = 4$.



Programmed learning (c. 1978)

Answer 11
critical

12

The instances the student is asked to categorize in order to test mastery of a concept should be _____ from those used to teach the concept.

Turn to page 353 ►

Programmed learning (c. 1978)

Answer 12
different

13

When two or more concepts form a relationship, this is a _____.

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Programmed learning (c. 1978)

Answer 13
principle

14

A principle consists of two or more (a) _____ whereas a verbal chain consists of several (b) _____ in an indicated order.

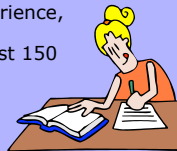
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Instructional exercises

1. Read Wilson: '[The place and aims of reflection in learning](#)'

2. Activity

- What is meant by 'in-task reflection.' How does this relate to colloquial, academic, interpreted, reflection?
- In relation to the Australian experience, how has reflection impacted on curriculum developed over the last 150 years?



Instructional exercises

- Watch the YouTube movie entitled: 'Motivational intervention'.
- As you watch make a list of the techniques being used by the counsellor:
 - What specific techniques were used?
 - Which techniques work?
 - What is the counsellor trying to do?



Word problems

If there are 26 sheep and 10 goats on a ship, how old is the captain?

Schoenfeld (1991)
"nonreason" - a willingness to engage in activities that don't make sense

Collins (1988): 'suboptimal schemes' for remembering information to pass tests



Word problems

Problem:

If a person jumps off a moving bus, how would that affect the speed of the bus?



"It depends on what the driver does"

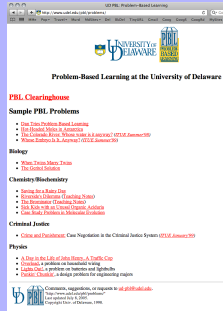
"It depends on whether the other passengers notice"

"It depends on how heavy the person is"

"It depends on whether anyone cares about the person"

Some PBL problems

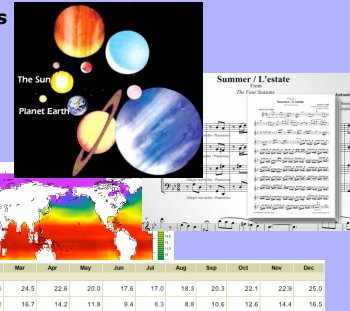
- Problem-based learning example
- [When Twins Marry Twins](#)



Thematic approaches

The four seasons

- Science
- Music
- Poetry/writing
- Mathematics
- Geography



Most video games

- Most games do not require a product



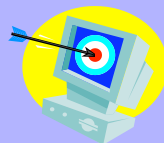
What are authentic tasks?

- have real-world relevance
- are ill-defined
- comprise a complex task to be investigated by students over a sustained period of time
- provide the opportunity for students to examine the task from different perspectives, using a variety of resources
- provide the opportunity to collaborate



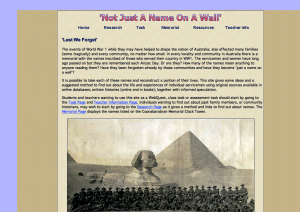
Authentic tasks:

- provide the opportunity to reflect
- can be integrated and applied across different subject areas
- are seamlessly integrated with the assessment
- create polished products valuable in their own right
- allow competing solutions and diversity of outcome



Example: History

- Course: [Year 10 History - World War 1](#)
- Peter Morrissey, Coonabarabran High School

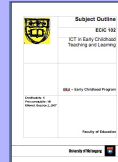


Example: Negotiation skills

- Course: Management - Employment relations
- Delicate dining
- Sandra Jones, RMIT, Melbourne



Example: Digital stories



- 1st year teacher education compulsory IT subject
- One major task over 7 weeks

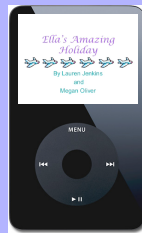
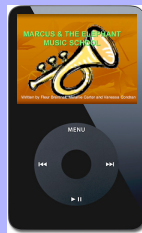


Digital stories

Device
iPods

Curriculum/focus
IT for Early childhood teachers

Task
Create a podcast of an original story - a talking book created in Powerpoint and iMovie



The task

- 7 weeks in a 13 week semester
- Technology available to students:
 - iPods and microphones (1 x iPod per group of 2-3 students)
 - Video and still cameras - students used their own
 - Computers and software required for story-book construction: (e.g., Powerpoint, GarageBand, iTunes, iMovie, iPhoto, Word, ComicLife)



Writing the story

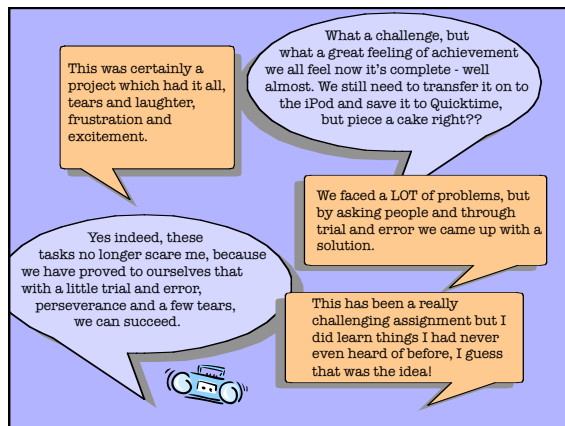
- Children's author as guest speaker
- Research and choose topic
- Write and storyboard story



Sharing

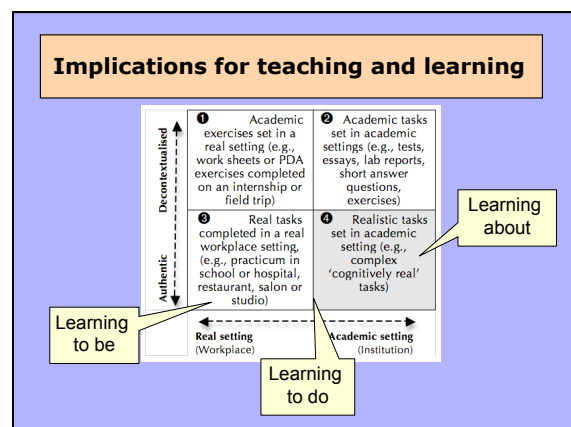
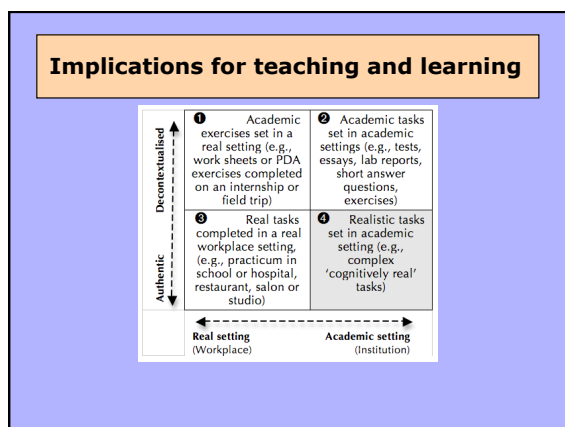
- Groups publish story to the course website
- Students download each other's stories to put into their course portfolios and resources
- Students present Powerpoint presentations in class, and submit stories on iPods for assessment
- Students create a reflective journal on the process and product (e.g., as podcast, blog, comic or webpage)





COGNITIVE TOOLS

Brainstorming ideas in **Inspiration**
 Researching on **internet**
 Creating story pages in **Powerpoint** **Creating movie in iMovie**
Inserting images **Inserting sounds**
Scanning drawings **Recording voiceovers**
Exporting files **Importing files** **Adding sound effects** **Timing slide advances**
 Creating **movie files** **Uploading files to server** **Publishing podcasts**
Downloading other stories
Uploading files to iPods
 Reflective journal as **blog** or **Word** document
 Creating **pdfs**



Website to accompany presentations

Downloadable books, papers, links to sites and resources

<http://web.me.com/janherrington/ITE2010/>

